

February 28, 2003

FINAL RULE TO REDUCE TOXIC AIR EMISSIONS FROM REFRACTORY PRODUCTS MANUFACTURING

FACT SHEET

TODAY'S ACTION

- The Environmental Protection Agency (EPA) is issuing a final rule to reduce emissions of toxic air pollutants from refractory products manufacturing facilities.
- Toxic air pollutants, or air toxics, are those pollutants known or suspected to cause cancer and other serious health or developmental problems.
- Refractory products are heat-resistant materials that provide the linings for high-temperature furnaces, reactors, and other processing units where extremes of temperature, corrosion, and abrasion would destroy other materials.
- Today's final rule will
 - ▶ limit emissions of organic air toxics such as formaldehyde, polycyclic organic matter (POM), phenol, ethylene glycol, and methanol that occur during the manufacture of a number of different types of refractory products;
 - ▶ limit emissions of hydrogen fluoride (HF) and hydrochloric acid (HCl) from new kilns during the manufacture of clay refractory products; and
 - ▶ require the use of natural gas as fuel for existing kilns that are used to fire clay refractory products and for new and existing kilns that are used to fire chromium refractory products.

BACKGROUND

- The Clean Air Act Amendments of 1990 require EPA to identify categories of industries or "source categories" that emit one or more of the listed 188 hazardous air pollutants.
- EPA's published list of source categories includes refractories manufacturing.
- For major sources within each source category, the Clean Air Act requires EPA to develop standards that restrict emissions to levels consistent with the lowest-emitting (also called best-performing) sources.
- Major sources are those that emit 10 tons a year or more of a single toxic air pollutant or 25 tons a year or more of a combination of air toxics. EPA estimates that about eight refractory products manufacturing facilities are major sources.

- Air toxics emitted during the manufacture of refractory products include methanol, formaldehyde, phenol, ethylene glycol, polycyclic organic matter (POM), chromium, hydrogen fluoride (HF), and hydrochloric acid (HCl). Exposure to these air toxics may produce a variety of human health effects such as irritation of the lung, skin, and mucous membranes, effects on the central nervous system, and damage to the liver, kidneys, and skeleton. EPA has classified formaldehyde and POM as probable human carcinogens, and EPA has classified the hexavalent form of chromium as a known human carcinogen.
- Processes within refractory facilities that emit organic air toxics include drying, curing, firing, pitch heating, shape preheating, defuming of pitch-impregnated shapes, and coking.

FINAL RULE REQUIREMENTS

- The final rule provides refractory manufacturing facilities that emit organic air toxics two options for compliance: (1) limit emissions of total hydrocarbon to 20 parts per million corrected to 18 percent oxygen or (2) limit mass emissions of total hydrocarbons by at least 95 percent.
- Clay refractory products kilns emit acid gases including the air toxics HF and HCL. These kilns fall into two categories: tunnel kilns and periodic kilns. Tunnel kilns continuously operate as they fire refractory products. Periodic kilns fire refractory products in “batches” or cycles.
- The final rule provides industry with options to meet emission limits for both HF and HCl from new clay refractory kilns: 1) new tunnel kilns will have to meet an HF emission limit of 0.019 kilograms per megagram (kg/Mg) of uncalcined clay processed or reduce HF emissions by at least 90 percent; 2) new tunnel kilns also will be required to meet an HCl emission limit of 0.091 kg/Mg of uncalcined clay processed or reduce uncontrolled HCl emissions by at least 30 percent; and 3) new periodic kilns will be required to reduce HF emissions by at least 90 percent and HCl emissions by at least 30 percent.

BENEFITS AND COST

- The final rule will reduce emissions of air toxics (formaldehyde, phenol, ethylene glycol, and POM), by 137 tons a year-- a 50 percent reduction from 1996 levels.
- The rule also will reduce emissions of volatile organic compounds by 182 tons a year -- an 18 percent reduction from 1996 levels. Volatile organic compounds contribute to the

formation of ground-level ozone, or smog.

- EPA estimates the total initial capital cost to industry to comply with the rule at about \$4.6 million. The total annualized cost to industry to comply with the rule will be about \$2.3 million per year.
- No significant adverse economic impact is expected to occur as a result of implementing this final rule.

FOR MORE INFORMATION

- To download the final rule from EPA's page on the World Wide Web, go to <http://www.epa.gov/ttn/oarpg>. For additional information, contact Susan Fairchild of the EPA's Office of Air Quality Planning and Standards at (919) 541-5167 or by e-mail at zapata.susan@epa.gov.
- EPA's Office of Air and Radiation's homepage on the Internet contains a wide range of information on the air toxics program, as well as many other air pollution programs and issues. The address is: www.epa.gov/oar/.